Upper Owyhee Watershed

Subbasin Assessment and

Total Maximum Daily Load

Technical Appendices

January 2003

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Glossary

305(b)	Refers to section 305 subsection "b" of the Clean Water Act. 305(b) generally describes a report of each state's water quality, and is the principle means by which the U.S. Environmental Protection Agency, congress, and the public evaluate whether U.S. waters meet water quality standards, the progress made in maintaining and restoring water quality, and the extent of the remaining problems.
303(d)	Refers to section 303 subsection "d" of the Clean Water Act. 303(d) requires states to develop a list of water bodies that do not meet water quality standards. This section also requires total maximum daily loads (TMDLs) be prepared for listed waters. Both the list and the TMDLs are subject to U.S. Environmental Protection Agency approval.
Acre-Foot	A volume of water that would cover an acre to a depth of one foot. Often used to quantify reservoir storage and the annual discharge of large rivers.
Adsorption	The adhesion of one substance to the surface of another. Clays, for example, can adsorb phosphorus and organic molecules.
Aeration	A process by which water becomes charged with air directly from the atmosphere. Dissolved gases, such as oxygen, are then available for reactions in water.
Aerobic	Describes life, processes, or conditions that require the presence of oxygen.
Assessment Database (ADB)	The ADB is a relational database application designed for the U.S. Environmental Protection Agency for tracking water quality assessment data, such as use attainment and causes and sources of impairment. States need to track this information and many other types of assessment data for thousands of water bodies, and integrate it into meaningful reports. The ADB is designed to make this process accurate, straightforward, and user-friendly for participating states, territories, tribes, and basin commissions.
Adfluvial	Describes fish whose life history involves seasonal migration from lakes to streams for spawning.

Adjunct	In the context of water quality, adjunct refers to areas directly adjacent to focal or refuge habitats that have been degraded by human or natural disturbances and do not presently support high diversity or abundance of native species.
Alevin	A newly hatched, incompletely developed fish (usually a salmonid) still in nest or inactive on the bottom of a water body, living off stored yolk.
Algae	Non-vascular (without water-conducting tissue) aquatic plants that occur as single cells, colonies, or filaments.
Alluvium	Unconsolidated recent stream deposition.
Ambient	General conditions in the environment. In the context of water quality, ambient waters are those representative of general conditions, not associated with episodic perturbations, or specific disturbances such as a wastewater outfall (Armantrout 1998, EPA 1996).
Anadromous	Fish, such as salmon and sea-run trout, that live part or the majority of their lives in the salt water but return to fresh water to spawn.
Anaerobic	Describes the processes that occur in the absence of molecular oxygen and describes the condition of water that is devoid of molecular oxygen.
Anoxia	The condition of oxygen absence or deficiency.
Anthropogenic	Relating to, or resulting from, the influence of human beings on nature.
Anti-Degradation	Refers to the U.S. Environmental Protection Agency's interpretation of the Clean Water Act goal that states and tribes maintain, as well as restore, water quality. This applies to waters that meet or are of higher water quality than required by state standards. State rules provide that the quality of those high quality waters may be lowered only to allow important social or economic development and only after adequate public participation (IDAPA 58.01.02.051). In all cases, the existing beneficial uses must be maintained. State rules further define lowered water quality to be 1) a measurable change, 2) a change adverse to a use, and 3) a change in a pollutant relevant to the water's uses (IDAPA 58.01.02.003.56).

Aquatic	Occurring, growing, or living in water.
Aquifer	An underground, water-bearing layer or stratum of permeable rock, sand, or gravel capable of yielding of water to wells or springs.
Assemblage (aquatic)	An association of interacting populations of organisms in a given water body; for example, a fish assemblage, or a benthic macroinvertebrate assemblage (also see Community) (EPA 1996).
Assimilative Capacity	The ability to process or dissipate pollutants without ill effect to beneficial uses.
Autotrophic	An organism is considered autotrophic if it uses carbon dioxide as its main source of carbon. This most commonly happens through photosynthesis.
Batholith	A large body of intrusive igneous rock that has more than 40 square miles of surface exposure and no known floor. A batholith usually consists of coarse-grained rocks such as granite.
Bedload	Material (generally sand-sized or larger sediment) that is carried along the streambed by rolling or bouncing.
Beneficial Use	Any of the various uses of water, including, but not limited to, aquatic biota, recreation, water supply, wildlife habitat, and aesthetics, which are recognized in water quality standards.
Beneficial Use Reconnaissance Program (BURP)	A program for conducting systematic biological and physical habitat surveys of water bodies in Idaho. BURP protocols address lakes, reservoirs, and wadeable streams and rivers.
Benthic	Pertaining to or living on or in the bottom sediment of a water body.
Benthic Organic Matter	The organic matter on the bottom of a water body.
Benthos	Organisms living in and on the bottom sediment of lakes and streams. Originally, the term meant the lake bottom, but it is now applied almost uniformly to the animals associated with the lake and stream bottoms.

Best Management Practices (BMPs)	Structural, nonstructural, and managerial techniques that are effective and practical means to control nonpoint source pollutants.
Best Professional Judgment	A conclusion and/or interpretation derived by a trained and/or technically competent individual by applying interpretation and synthesizing information.
Biochemical Oxygen Demand (BOD)	The amount of dissolved oxygen used by organisms during the decomposition (respiration) of organic matter, expressed as mass of oxygen per volume of water, over some specified period of time.
Biological Integrity	1) The condition of an aquatic community inhabiting unimpaired water bodies of a specified habitat as measured by an evaluation of multiple attributes of the aquatic biota (EPA 1996). 2) The ability of an aquatic ecosystem to support and maintain a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to the natural habitats of a region (Karr 1991).
Biomass	The weight of biological matter. Standing crop is the amount of biomass (e.g., fish or algae) in a body of water at a given time. Often expressed as grams per square meter.
Biota	The animal and plant life of a given region.
Biotic	A term applied to the living components of an area.
Clean Water Act (CWA)	The Federal Water Pollution Control Act (Public Law 92-50, commonly known as the Clean Water Act), as last reauthorized by the Water Quality Act of 1987 (Public Law 100-4), establishes a process for states to use to develop information on, and control the quality of, the nation's water resources.
Coliform Bacteria	A group of bacteria predominantly inhabiting the intestines of humans and animals but also found in soil. Coliform bacteria are commonly used as indicators of the possible presence of pathogenic organisms (also see Fecal Coliform Bacteria).
Colluvium	Material transported to a site by gravity.
Community	A group of interacting organisms living together in a given place.

Conductivity The ability of an aqueous solution to carry electric current, expressed in micro (ì) mhos/cm at 25 °C. Conductivity is affected by dissolved solids and is used as an indirect measure of total dissolved solids in a water sample.

Cretaceous The final period of the Mesozoic era (after the Jurassic and before the Tertiary period of the Cenozoic era), thought to have covered the span of time between 135 and 65 million years ago.

Criteria In the context of water quality, numeric or descriptive factors taken into account in setting standards for various pollutants. These factors are used to determine limits on allowable concentration levels, and to limit the number of violations per year. EPA develops criteria guidance; states establish criteria.

Cubic Feet per Second A unit of measure for the rate of flow or discharge of water. One cubic foot per second is the rate of flow of a stream with a cross-section of one square foot flowing at a mean velocity of one foot per second. At a steady rate, once cubic foot per second is equal to 448.8 gallons per minute and 10,984 acre-feet per day.

Cultural Eutrophication The process of eutrophication that has been accelerated by human-caused influences. Usually seen as an increase in nutrient loading (also see Eutrophication).

Culturally Induced Erosion Erosion caused by increased runoff or wind action due to the work of humans in deforestation, cultivation of the land, overgrazing, and disturbance of natural drainages; the excess of erosion over the normal for an area (also see Erosion).

Debris Torrent The sudden down slope movement of soil, rock, and vegetation on steep slopes, often caused by saturation from heavy rains.

Decomposition The breakdown of organic molecules (e.g., sugar) to inorganic molecules (e.g., carbon dioxide and water) through biological and nonbiological processes.

Depth Fines Percent by weight of particles of small size within a vertical core of volume of a streambed or lake bottom sediment. The upper size threshold for fine sediment for fisheries purposes varies from 0.8 to 6.5 mm depending on the observer and methodology used. The depth sampled varies but is typically about one foot (30 cm).

Designated Uses Those water uses identified in state water quality standards that must be achieved and maintained as required under the Clean Water Act.

Discharge	The amount of water flowing in the stream channel at the time of measurement. Usually expressed as cubic feet per second (cfs).
Dissolved Oxygen (DO)	The oxygen dissolved in water. Adequate DO is vital to fish and other aquatic life.
Disturbance	Any event or series of events that disrupts ecosystem, community, or population structure and alters the physical environment.
E. coli	Short for *Escherichia Coli*, *E. coli* are a group of bacteria that are a subspecies of coliform bacteria. Most *E. coli* are essential to the healthy life of all warm-blooded animals, including humans. Their presence is often indicative of fecal contamination.
Ecology	The scientific study of relationships between organisms and their environment; also defined as the study of the structure and function of nature.
Ecological Indicator	A characteristic of an ecosystem that is related to, or derived from, a measure of a biotic or abiotic variable that can provide quantitative information on ecological structure and function. An indicator can contribute to a measure of integrity and sustainability. Ecological indicators are often used within the multimetric index framework.
Ecological Integrity	The condition of an unimpaired ecosystem as measured by combined chemical, physical (including habitat), and biological attributes (EPA 1996).
Ecosystem	The interacting system of a biological community and its non-living (abiotic) environmental surroundings.
Effluent	A discharge of untreated, partially treated, or treated wastewater into a receiving water body.

Endangered Species	Animals, birds, fish, plants, or other living organisms threatened with imminent extinction. Requirements for declaring a species as endangered are contained in the Endangered Species Act.
Environment	The complete range of external conditions, physical and biological, that affect a particular organism or community.
Eocene	An epoch of the early Tertiary period, after the Paleocene and before the Oligocene.
Eolian	Windblown, referring to the process of erosion, transport, and deposition of material by the wind.
Ephemeral Stream	A stream or portion of a stream that flows only in direct response to precipitation. It receives little or no water from springs and no long continued supply from melting snow or other sources. Its channel is at all times above the water table. (American Geologic Institute 1962).
Erosion	The wearing away of areas of the earth's surface by water, wind, ice, and other forces.
Eutrophic	From Greek for "well nourished," this describes a highly productive body of water in which nutrients do not limit algal growth. It is typified by high algal densities and low clarity.
Eutrophication	1) Natural process of maturing (aging) in a body of water. 2) The natural and human-influenced process of enrichment with nutrients, especially nitrogen and phosphorus, leading to an increased production of organic matter.
Exceedence	A violation (according to DEQ policy) of the pollutant levels permitted by water quality criteria.
Existing Beneficial Use or Existing Use	A beneficial use actually attained in waters on or after November 28, 1975, whether or not the use is designated for the waters in Idaho's *Water Quality Standards and Wastewater Treatment Requirements* (IDAPA 58.01.02).
Exotic Species	A species that is not native (indigenous) to a region.
Extrapolation	Estimation of unknown values by extending or projecting from known values.

Fauna	Animal life, especially the animals characteristic of a region, period, or special environment.
Fecal Coliform Bacteria	Bacteria found in the intestinal tracts of all warm-blooded animals or mammals. Their presence in water is an indicator of pollution and possible contamination by bacteria (also see Coliform Bacteria).
Fecal Streptococci	A species of spherical bacteria including pathogenic strains found in the intestines of warm-blooded animals.
Feedback Loop	In the context of watershed management planning, a feedback loop is a process that provides for tracking progress toward goals and revising actions according to that progress.
Fixed-Location Monitoring	Sampling or measuring environmental conditions continuously or repeatedly at the same location.
Flow	See Discharge.
Fluvial	In fisheries, this describes fish whose life history takes place entirely in streams but migrate to smaller streams for spawning.
Focal	Critical areas supporting a mosaic of high quality habitats that sustain a diverse or unusually productive complement of native species.
Fully Supporting	In compliance with water quality standards and within the range of biological reference conditions for all designated and exiting beneficial uses as determined through the *Water Body Assessment Guidance* (Grafe et al. 2000).
Fully Supporting Cold Water	Reliable data indicate functioning, sustainable cold water biological assemblages (e.g., fish, macroinvertebrates, or algae), none of which have been modified significantly beyond the natural range of reference conditions (EPA 1997).
Fully Supporting but Threatened	An intermediate assessment category describing water bodies that fully support beneficial uses, but have a declining trend in water quality conditions, which if not addressed, will lead to a "not fully supporting" status.
Geographical Information Systems (GIS)	A georeferenced database.

Geometric Mean A back-transformed mean of the logarithmically transformed numbers often used to describe highly variable, right-skewed data (a few large values), such as bacterial data.

Grab Sample A single sample collected at a particular time and place. It may represent the composition of the water in that water column.

Gradient The slope of the land, water, or streambed surface.

Ground Water Water found beneath the soil surface saturating the layer in which it is located. Most ground water originates as rainfall, is free to move under the influence of gravity, and usually emerges again as stream flow.

Growth Rate A measure of how quickly something living will develop and grow, such as the amount of new plant or animal tissue produced per a given unit of time, or number of individuals added to a population.

Habitat The living place of an organism or community.

Headwater The origin or beginning of a stream.

Hydrologic Basin The area of land drained by a river system, a reach of a river and its tributaries in that reach, a closed basin, or a group of streams forming a drainage area (also see Watershed).

Hydrologic Cycle The cycling of water from the atmosphere to the earth (precipitation) and back to the atmosphere (evaporation and plant transpiration). Atmospheric moisture, clouds, rainfall, runoff, surface water, ground water, and water infiltrated in soils are all part of the hydrologic cycle.

Hydrologic Unit One of a nested series of numbered and named watersheds arising from a national standardization of watershed delineation. The initial 1974 effort (USGS 1987) described four levels (region, subregion, accounting unit, cataloging unit) of watersheds throughout the United States. The fourth level is uniquely identified by an eight-digit code built of two-digit fields for each level in the classification. Originally termed a cataloging unit, fourth field hydrologic units have been more commonly called subbasins. Fifth and sixth field hydrologic units have since been delineated for much of the country and are known as watershed and subwatersheds, respectively.

Hydrologic Unit Code (HUC)	The number assigned to a hydrologic unit. Often used to refer to fourth field hydrologic units.
Hydrology	The science dealing with the properties, distribution, and circulation of water.
Impervious	Describes a surface, such as pavement, that water cannot penetrate.
Influent	A tributary stream.
Inorganic	Materials not derived from biological sources.
Instantaneous	A condition or measurement at a moment (instant) in time.
Intergravel Dissolved Oxygen	The concentration of dissolved oxygen within spawning gravel. Consideration for determining spawning gravel includes species, water depth, velocity, and substrate.
Intermittent Stream	1) A stream that flows only part of the year, such as when the ground water table is high or when the stream receives water from springs or from surface sources such as melting snow in mountainous areas. The stream ceases to flow above the streambed when losses from evaporation or seepage exceed the available stream flow. 2) A stream that has a period of zero flow for at least one week during most years.
Interstate Waters	Waters that flow across or form part of state or international boundaries, including boundaries with Indian nations.
Irrigation Return Flow	Surface (and subsurface) water that leaves a field following the application of irrigation water and eventually flows into streams.
Key Watershed	A watershed that has been designated in Idaho Governor Batt's *State of Idaho Bull Trout Conservation Plan* (1996) as critical to the long-term persistence of regionally important trout populations.
Knickpoint	Any interruption or break of slope.
Land Application	A process or activity involving application of wastewater, surface water, or semi-liquid material to the land surface for the purpose of treatment, pollutant removal, or ground water recharge.

Limiting Factor A chemical or physical condition that determines the growth potential of an organism. This can result in a complete inhibition of growth, but typically results in less than maximum growth rates.

Limnology The scientific study of fresh water, especially the history, geology, biology, physics, and chemistry of lakes.

Load Allocation (LA) A portion of a water body's load capacity for a given pollutant that is given to a particular nonpoint source (by class, type, or geographic area).

Load(ing) The quantity of a substance entering a receiving stream, usually expressed in pounds or kilograms per day or tons per year. Loading is the product of flow (discharge) and concentration.

Loading Capacity (load capacity) A determination of how much pollutant a water body can receive over a given period without causing violations of state water quality standards. Upon allocation to various sources, and a margin of safety, it becomes a total maximum daily load.

Loam Refers to a soil with a texture resulting from a relative balance of sand, silt, and clay. This balance imparts many desirable characteristics for agricultural use.

Loess A uniform wind-blown deposit of silty material. Silty soils are among the most highly erodable.

Lotic An aquatic system with flowing water such as a brook, stream, or river where the net flow of water is from the headwaters to the mouth.

Luxury Consumption A phenomenon in which sufficient nutrients are available in either the sediment or the water column of a water body, such that aquatic plants take up and store an abundance in excess of the plants' current needs.

Macroinvertebrate An invertebrate animal (without a backbone) large enough to be seen without magnification and retained by a 500ìm mesh (U.S. #30) screen.

Macrophytes Rooted and floating vascular aquatic plants, commonly referred to as water weeds. These plants usually flower and bear seeds. Some forms, such as duckweed and coontail (*Ceratophyllum sp.*), are free-floating forms not rooted in sediment.

Margin of Safety (MOS)	An implicit or explicit portion of a water body's loading capacity set aside to allow the uncertainly about the relationship between the pollutant loads and the quality of the receiving water body. This is a required component of a total maximum daily load (TMDL) and is often incorporated into conservative assumptions used to develop the TMDL (generally within the calculations and/or models). The MOS is not allocated to any sources of pollution.
Mass Wasting	A general term for the down slope movement of soil and rock material under the direct influence of gravity.
Mean	Describes the central tendency of a set of numbers. The arithmetic mean (calculated by adding all items in a list, then dividing by the number of items) is the statistic most familiar to most people.
Median	The middle number in a sequence of numbers. If there are an even number of numbers, the median is the average of the two middle numbers. For example, 4 is the median of 1, 2, 4, 14, 16; and 6 is the median of 1, 2, 5, 7, 9, 11.
Metric	1) A discrete measure of something, such as an ecological indicator (e.g., number of distinct taxon). 2) The metric system of measurement.
Milligrams per Liter (mg/l)	A unit of measure for concentration in water, essentially equivalent to parts per million (ppm).
Million gallons per day (MGD)	A unit of measure for the rate of discharge of water, often used to measure flow at wastewater treatment plants. One MGD is equal to 1.547 cubic feet per second.
Miocene	Of, relating to, or being an epoch of, the Tertiary between the Pliocene and the Oligocene periods, or the corresponding system of rocks.
Monitoring	A periodic or continuous measurement of the properties or conditions of some medium of interest, such as monitoring a water body.
Mouth	The location where flowing water enters into a larger water body.

National Pollution Discharge Elimination System (NPDES)	A national program established by the Clean Water Act for permitting point sources of pollution. Discharge of pollution from point sources is not allowed without a permit.
Natural Condition	A condition indistinguishable from that without human-caused disruptions.
Nitrogen	An element essential to plant growth, and thus is considered a nutrient.
Nodal	Areas that are separated from focal and adjunct habitats, but serve critical life history functions for individual native fish.
Nonpoint Source	A dispersed source of pollutants, generated from a geographical area when pollutants are dissolved or suspended in runoff and then delivered into waters of the state. Nonpoint sources are without a discernable point or origin. They include, but are not limited to, irrigated and non-irrigated lands used for grazing, crop production, and silviculture; rural roads; construction and mining sites; log storage or rafting; and recreation sites.
Not Assessed (NA)	A concept and an assessment category describing water bodies that have been studied, but are missing critical information needed to complete an assessment.
Not Attainable	A concept and an assessment category describing water bodies that demonstrate characteristics that make it unlikely that a beneficial use can be attained (e.g., a stream that is dry but designated for salmonid spawning).
Not Fully Supporting	Not in compliance with water quality standards or not within the range of biological reference conditions for any beneficial use as determined through the *Water Body Assessment Guidance* (Grafe et al. 2000).
Not Fully Supporting Cold Water	At least one biological assemblage has been significantly modified beyond the natural range of its reference condition (EPA 1997).
Nuisance	Anything which is injurious to the public health or an obstruction to the free use, in the customary manner, of any waters of the state.

Nutrient	Any substance required by living things to grow. An element or its chemical forms essential to life, such as carbon, oxygen, nitrogen, and phosphorus. Commonly refers to those elements in short supply, such as nitrogen and phosphorus, which usually limit growth.
Nutrient Cycling	The flow of nutrients from one component of an ecosystem to another, as when macrophytes die and release nutrients that become available to algae (organic to inorganic phase and return).
Oligotrophic	The Greek term for "poorly nourished." This describes a body of water in which productivity is low and nutrients are limiting to algal growth, as typified by low algal density and high clarity.
Organic Matter	Compounds manufactured by plants and animals that contain principally carbon.
Orthophosphate	A form of soluble inorganic phosphorus most readily used for algal growth.
Oxygen-Demanding Materials	Those materials, mainly organic matter, in a water body which consume oxygen during decomposition.
Parameter	A variable, measurable property whose value is a determinant of the characteristics of a system; e.g., temperature, dissolved oxygen, and fish populations are parameters of a stream or lake.
Partitioning	The sharing of limited resources by different races or species; use of different parts of the habitat, or the same habitat at different times. Also the separation of a chemical into two or more phases, such as partitioning of phosphorus between the water column and sediment.
Bacteria	Disease-producing organisms (e.g., bacteria, viruses, parasites).
Perennial Stream	A stream that flows year-around in most years.
Periphyton	Attached microflora (algae and diatoms) growing on the bottom of a water body or on submerged substrates, including larger plants.

Pesticide Substances or mixtures of substances intended for preventing, destroying, repelling, or mitigating any pest. Also, any substance or mixture intended for use as a plant regulator, defoliant, or desiccant.

pH The negative $\log_{10}$ of the concentration of hydrogen ions, a measure which in water ranges from very acid (pH=1) to very alkaline (pH=14). A pH of 7 is neutral. Surface waters usually measure between pH 6 and 9.

Phased TMDL A total maximum daily load (TMDL) that identifies interim load allocations and details further monitoring to gauge the success of management actions in achieving load reduction goals and the effect of actual load reductions on the water quality of a water body. Under a phased TMDL, a refinement of load allocations, wasteload allocations, and the margin of safety is planned at the outset.

Phosphorus An element essential to plant growth, often in limited supply, and thus considered a nutrient.

Physiochemical In the context of bioassessment, the term is commonly used to mean the physical and chemical factors of the water column that relate to aquatic biota. Examples in bioassessment usage include saturation of dissolved gases, temperature, pH, conductivity, dissolved or suspended solids, forms of nitrogen, and phosphorus. This term is used interchangeable with the terms "physical/chemical" and "physicochemical."

Plankton Microscopic algae (phytoplankton) and animals (zooplankton) that float freely in open water of lakes and oceans.

Point Source A source of pollutants characterized by having a discrete conveyance, such as a pipe, ditch, or other identifiable "point" of discharge into a receiving water. Common point sources of pollution are industrial and municipal wastewater.

Pollutant Generally, any substance introduced into the environment that adversely affects the usefulness of a resource or the health of humans, animals, or ecosystems.

Pollution	A very broad concept that encompasses human-caused changes in the environment which alter the functioning of natural processes and produce undesirable environmental and health effects. This includes human-induced alteration of the physical, biological, chemical, and radiological integrity of water and other media.
Population	A group of interbreeding organisms occupying a particular space; the number of humans or other living creatures in a designated area.
Pretreatment	The reduction in the amount of pollutants, elimination of certain pollutants, or alteration of the nature of pollutant properties in wastewater prior to, or in lieu of, discharging or otherwise introducing such wastewater into a publicly owned wastewater treatment plant.
Primary Productivity	The rate at which algae and macrophytes fix carbon dioxide using light energy. Commonly measured as milligrams of carbon per square meter per hour.
Protocol	A series of formal steps for conducting a test or survey.
Qualitative	Descriptive of kind, type, or direction.
Quality Assurance (QA)	A program organized and designed to provide accurate and precise results. Included are the selection of proper technical methods, tests, or laboratory procedures; sample collection and preservation; the selection of limits; data evaluation; quality control; and personnel qualifications and training. The goal of QA is to assure the data provided are of the quality needed and claimed (Rand 1995, EPA 1996).
Quality Control (QC)	Routine application of specific actions required to provide information for the quality assurance program. Included are standardization, calibration, and replicate samples. QC is implemented at the field or bench level (Rand 1995, EPA 1996).
Quantitative	Descriptive of size, magnitude, or degree.
Reach	A stream section with fairly homogenous physical characteristics.
Reconnaissance	An exploratory or preliminary survey of an area.
Reference	A physical or chemical quantity whose value is known, and thus is used to calibrate or standardize instruments.

Reference Condition	1) A condition that fully supports applicable beneficial uses with little affect from human activity and represents the highest level of support attainable. 2) A benchmark for populations of aquatic ecosystems used to describe desired conditions in a biological assessment and acceptable or unacceptable departures from them. The reference condition can be determined through examining regional reference sites, historical conditions, quantitative models, and expert judgment (Hughes 1995).
Reference Site	A specific locality on a water body that is minimally impaired and is representative of reference conditions for similar water bodies.
Representative Sample	A portion of material or water that is as similar in content and consistency as possible to that in the larger body of material or water being sampled.
Resident	A term that describes fish that do not migrate.
Respiration	A process by which organic matter is oxidized by organisms, including plants, animals, and bacteria. The process converts organic matter to energy, carbon dioxide, water, and lesser constituents.
Riffle	A relatively shallow, gravelly area of a streambed with a locally fast current, recognized by surface choppiness. Also an area of higher streambed gradient and roughness.
Riparian	Associated with aquatic (stream, river, lake) habitats. Living or located on the bank of a water body.
Riparian Habitat Conservation Area (RHCA)	A U.S. Forest Service description of land within the following number of feet up-slope of each of the banks of streams: - 300 feet from perennial fish-bearing streams - 150 feet from perennial non-fish-bearing streams - 100 feet from intermittent streams, wetlands, and ponds in priority watersheds.
River	A large, natural, or human-modified stream that flows in a defined course or channel, or a series of diverging and converging channels.
Runoff	The portion of rainfall, melted snow, or irrigation water that flows across the surface, through shallow underground zones (interflow), and through ground water to creates streams.

Sediment	Deposits of fragmented materials from weathered rocks and organic material that were suspended in, transported by, and eventually deposited by water or air.
Settleable Solids	The volume of material that settles out of one liter of water in one hour.
Species	1) A reproductively isolated aggregate of interbreeding organisms having common attributes and usually designated by a common name. 2) An organism belonging to such a category.
Spring	Ground water seeping out of the earth where the water table intersects the ground surface.
Stagnation	The absence of mixing in a water body.
Stenothermal	Unable to tolerate a wide temperature range.
Stratification	An Idaho Department of Environmental Quality classification method used to characterize comparable units (also called classes or strata).
Stream	A natural water course containing flowing water, at least part of the year. Together with dissolved and suspended materials, a stream normally supports communities of plants and animals within the channel and the riparian vegetation zone.
Stream Order	Hierarchical ordering of streams based on the degree of branching. A first-order stream is an unforked or unbranched stream. Under Strahler's (1957) system, higher order streams result from the joining of two streams of the same order.
Storm Water Runoff	Rainfall that quickly runs off the land after a storm. In developed watersheds the water flows off roofs and pavement into storm drains that may feed quickly and directly into the stream. The water often carries pollutants picked up from these surfaces.
Stressors	Physical, chemical, or biological entities that can induce adverse effects on ecosystems or human health.
Subbasin	A large watershed of several hundred thousand acres. This is the name commonly given to 4^{th} field hydrologic units (also see Hydrologic Unit).
Subbasin Assessment	A watershed-based problem assessment that is the first step in

(SBA)	developing a total maximum daily load in Idaho.
Subwatershed	A smaller watershed area delineated within a larger watershed, often for purposes of describing and managing localized conditions. Also proposed for adoption as the formal name for 6th field hydrologic units.
Surface Fines	Sediment of small size deposited on the surface of a streambed or lake bottom. The upper size threshold for fine sediment for fisheries purposes varies from 0.8 to 605 mm depending on the observer and methodology used. Results are typically expressed as a percentage of observation points with fine sediment.
Surface Runoff	Precipitation, snow melt, or irrigation water in excess of what can infiltrate the soil surface and be stored in small surface depressions; a major transporter of nonpoint source pollutants in rivers, streams, and lakes. Surface runoff is also called overland flow.
Surface Water	All water naturally open to the atmosphere (rivers, lakes, reservoirs, streams, impoundments, seas, estuaries, etc.) and all springs, wells, or other collectors that are directly influenced by surface water.
Suspended Sediment	Fine material (usually sand size or smaller) that remains suspended by turbulence in the water column until deposited in areas of weaker current. These sediment cause turbidity and, when deposited, reduce living space within streambed gravels and can cover fish eggs or alevins.
Taxon	Any formal taxonomic unit or category of organisms (e.g., species, genus, family, order). The plural of taxon is taxa (Armantrout 1998).
Tertiary	An interval of geologic time lasting from 66.4 to 1.6 million years ago. It constitutes the first of two periods of the Cenozoic Era, the second being the Quaternary. The Tertiary has five subdivisions, which from oldest to youngest are the Paleocene, Eocene, Oligocene, Miocene, and Pliocene epochs.
Thalweg	The center of a stream's current, where most of the water flows.
Threatened Species	Species, determined by the U.S. Fish and Wildlife Service, which are likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

Total Maximum Daily Load (TMDL)	A TMDL is a water body's loading capacity after it has been allocated among pollutant sources. It can be expressed on a time basis other than daily if appropriate. Sediment loads, for example, are often calculated on an annual bases. TMDL = Loading Capacity = Load Allocation + Wasteload Allocation + Margin of Safety. In common usage, a TMDL also refers to the written document that contains the statement of loads and supporting analyses, often incorporating TMDLs for several water bodies and/or pollutants within a given watershed.
Total Dissolved Solids	Dry weight of all material in solution in a water sample as determined by evaporating and drying filtrate.
Total Suspended Solids (TSS)	The dry weight of material retained on a filter after filtration. Filter pore size and drying temperature can vary. American Public Health Association Standard Methods (Greenborg, Clescevi, and Eaton 1995) call for using a filter of 2.0 micron or smaller; a 0.45 micron filter is also often used. This method calls for drying at a temperature of 103-105 °C.
Toxic Pollutants	Materials that cause death, disease, or birth defects in organisms that ingest or absorb them. The quantities and exposures necessary to cause these effects can vary widely.
Tributary	A stream feeding into a larger stream or lake.
Trophic State	The level of growth or productivity of a lake as measured by phosphorus content, chlorophyll *a* concentrations, amount (biomass) of aquatic vegetation, algal abundance, and water clarity.
Turbidity	A measure of the extent to which light passing through water is scattered by fine suspended materials. The effect of turbidity depends on the size of the particles (the finer the particles, the greater the effect per unit weight) and the color of the particles.
Vadose Zone	The unsaturated region from the soil surface to the ground water table.
Wasteload Allocation (WLA)	The portion of receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. Wasteload allocations specify how much pollutant each point source may release to a water body.

Water Body	A stream, river, lake, estuary, coastline, or other water feature, or portion thereof.
Water Column	Water between the interface with the air at the surface and the interface with the sediment layer at the bottom. The idea derives from a vertical series of measurements (oxygen, temperature, phosphorus) used to characterize water.
Water Pollution	Any alteration of the physical, thermal, chemical, biological, or radioactive properties of any waters of the state, or the discharge of any pollutant into the waters of the state, which will or is likely to create a nuisance or to render such waters harmful, detrimental, or injurious to public health, safety, or welfare; to fish and wildlife; or to domestic, commercial, industrial, recreational, aesthetic, or other beneficial uses.
Water Quality	A term used to describe the biological, chemical, and physical characteristics of water with respect to its suitability for a beneficial use.
Water Quality Criteria	Levels of water quality expected to render a body of water suitable for its designated uses. Criteria are based on specific levels of pollutants that would make the water harmful if used for drinking, swimming, farming, or industrial processes.
Water Quality Limited	A label that describes water bodies for which one or more water quality criterion is not met or beneficial uses are not fully supported. Water quality limited segments may or may not be on a 303(d) list.
Water Quality Limited Segment (WQLS)	Any segment placed on a state's 303(d) list for failure to meet applicable water quality standards, and/or is not expected to meet applicable water quality standards in the period prior to the next list. These segments are also referred to as "303(d) listed."
Water Quality Management Plan	A state or area-wide waste treatment management plan developed and updated in accordance with the provisions of the Clean Water Act.
Water Quality Modeling	The prediction of the response of some characteristics of lake or stream water based on mathematical relations of input variables such as climate, stream flow, and inflow water quality.

Water Quality Standards	State-adopted and EPA-approved ambient standards for water bodies. The standards prescribe the use of the water body and establish the water quality criteria that must be met to protect designated uses.
Water Table	The upper surface of ground water; below this point, the soil is saturated with water.
Watershed	1) All the land which contributes runoff to a common point in a drainage network, or to a lake outlet. Watersheds are infinitely nested, and any large watershed is composed of smaller "subwatersheds." 2) The whole geographic region which contributes water to a point of interest in a water body.
Water Body Identification Number (WBID)	A number that uniquely identifies a water body in Idaho ties in to the Idaho Water Quality Standards and GIS information.
Wetland	An area that is at least some of the time saturated by surface or ground water so as to support with vegetation adapted to saturated soil conditions. Examples include swamps, bogs, fens, and marshes.
Young of the Year	Young fish born the year captured, evidence of spawning activity.

Appendix A. Unit Conversion Chart

Table A1. Metric - English unit conversions.

	English Units	Metric Units	To Convert	Example
Distance	Miles (mi.)	Kilometers (km)	1 mi. = 1.61 km 1 km = 0.62 mi.	3 mi. = 4.83 km 3 km = 1.86 mi.
Length	Inches (in) Feet (ft)	Centimeters (cm) Meters (m)	1 in = 2.54 cm 1 cm = 0.39 in 1 ft = 0.30 m 1 m = 3.28 ft	3 in = 7.62 cm 3 cm = 1.18 in 3 ft = 0.91 m 3 m = 9.84 ft
Area	Acres (ac) Square Feet (ft^2) Square Miles (mi^2)	Hectares (ha) Square Meters (m^2) Square Kilometers (km^2)	1 ac = 0.40 ha 1 ha = 2.47 ac 1 ft^2 = 0.09 m^2 1 m^2 = 10.76 ft^2 1 mi^2 = 2.59 km^2 1 km^2 = 0.39 mi^2	3 ac = 1.20 ha 3 ha = 7.41 ac 3 ft^2 = 0.28 m^2 3 m^2 = 32.29 ft^2 3 mi^2 = 7.77 km^2 3 km^2 = 1.16 mi^2
Volume	Gallons (g) Cubic Feet (ft^3)	Liters (l) Cubic Meters (m^3)	1 g = 3.78 l 1 l = 0.26 g 1 ft^3 = 0.03 m^3 1 m^3 = 35.32 ft^3	3 g = 11.35 l 3 l = 0.79 g 3 ft^3 = 0.09 m^3 3 m^3 = 105.94 ft^3
Flow Rate	Cubic Feet per Second (ft^3/sec)[1]	Cubic Meters per Second (m^3/sec)	1 ft^3/sec = 0.03 ^{3}/sec 1 m^3/sec = ft^3/sec	3 ft^3/sec = 0.09 m^3/sec 3 m^3/sec = 105.94 ft^3/sec
Concentration	Parts per Million (ppm)	Milligrams per Liter (mg/l)	1 ppm = 1 mg/l[2]	3 ppm = 3 mg/l
Weight	Pounds (lbs.)	Kilograms (kg)	1 lb. = 0.45 kg 1 kg = 2.20 lbs.	3 lb. = 1.36 kg 3 kg = 6.61 kg
Temperature	Fahrenheit (°F)	Celsius (°C)	°C = 0.55 (F - 32) °F = (C x 1.8) + 32	3 °F = -15.95 °C 3 ° C = 37.4 °F

[1] 1 ft^3/sec = 0.65 million gallons per day; 1 million gallons per day is equal to 1.55 ft^3/sec.

[2] The ratio of 1 ppm = 1 mg/l is approximate and is only accurate for water.

Appendix B. 5th Field Statistics

Table B1. 5th Field Statistics.

Upper Owyhee 4th Field HUC	Statistics
Land Use	
Rangeland	889,562 acres (88%)
Irrigated Gravity	1,493 acres (<1%)
Irrigated Sprinkler	2,396 acres (<1%)
Riparian	42,856 acres (4%)
Forested	76,108 acres (7.5%)
Ownership/Management	
Private	65,653 acres (6.5%)
State of Idaho	73,428 acres (7.3%)
Federal/Bureau of Land Management	746,833 acres (73.8%)
Federal/Tribal Lands	122,375 acres (12.1%)
Open Water	4,117 acres (0.4%)
5th Field HUCs	
Blue Creek	129,460 acres (11.8%)
Blue Creek Reservoir	136,477 acres (12.5%)
Deep Creek	71,598 acres (6.5%)
Lower Battle Creek	82,525 acres (7.5%)
Hurry Back Creek	98,405 acres (9.0%)
Lower Owyhee River	53,428 acres (4.9%)
Paiute Creek	50,634 acres (4.6%)
Pole Creek	54,550 acres (5.0%)
Red Canyon	49,898 acres (4.6%)
Ross Lake	110,009 acres (10.1%)
Dickshooter Creek	49,010 acres (4.5%)
Upper Battle Creek	100,653 acres (9.2%)
Yatahoney Creek*	107,994 acres (9.8%)
303(d) Listed Segments	
Blue Creek Reservoir	
Pollutants of Concern	Sediment
Juniper Basin Reservoir	749 acres
Pollutants of Concern	Sediment
Deep Creek	35.0 miles
Pollutants of Concern	Temperature and Sediment
Pole Creek	24.1 miles
Pollutants of Concern	Temperature and Sediment

Castle Creek	11.3 miles
Pollutants of Concern	Temperature and Sediment
Battle Creek	62.5 miles
Pollutants of Concern	Bacteria
Shoofly Creek	22.9 miles
Pollutants of Concern	Temperature and Sediment
Red Canyon Creek	5.2 miles
Pollutants of Concern	Temperature and Sediment
Nickel Creek	2.8 miles
Pollutants of Concern	Sediment

* Portions within state of Nevada

Table B2. Blue Creek 5th Field HUC Statistics.

Blue Creek 5th Field HUC	Statistics
Total Area	129,460 acres
0-1st Order Streams	92.5 miles
2nd Order Streams	50.0 miles
3rd Order Streams	14.8 miles
4th Order Streams	16.6 miles
5th Order Streams	
Canal Ditches	59.1 miles
Other	6.2 miles
§303(d) Listed Segments	
Shoofly Creek	1.6 miles
Listed Pollutant	Bacteria
Land Use	
Rangeland	94,039 acres
Irrigated	1,982 acres
Land Ownership/Management	
Private	10,320 acres
State of Idaho	14,955 acres
Federal (BLM)	11,101 acres
Open Water	535 acres
Federal (Tribal)	59,112 acres
Other Water Bodies	
Bell Creek	9.2 miles
Blue Creek	15.2 miles
Boyle Creek	4.5 miles
Damon Creek	2.6 miles
Dry Creek	7.0 miles
Indian Creek	4.8 miles
Miller Creek	6.3 miles
Moorcastle Creek	4.4 miles
Mountain View Lake	2.4 miles
Mud Creek	6.2 miles
Old Man Creek	5.2 miles
Papoose Creek	5.6 miles
Payne Creek	11.7 miles
Pig Creek	7.5 miles
Squaw Creek	16.0 miles

Blue Creek 5th Field HUC	Statistics
Thacker Slough	3.6 miles
Unnamed	117.3 miles

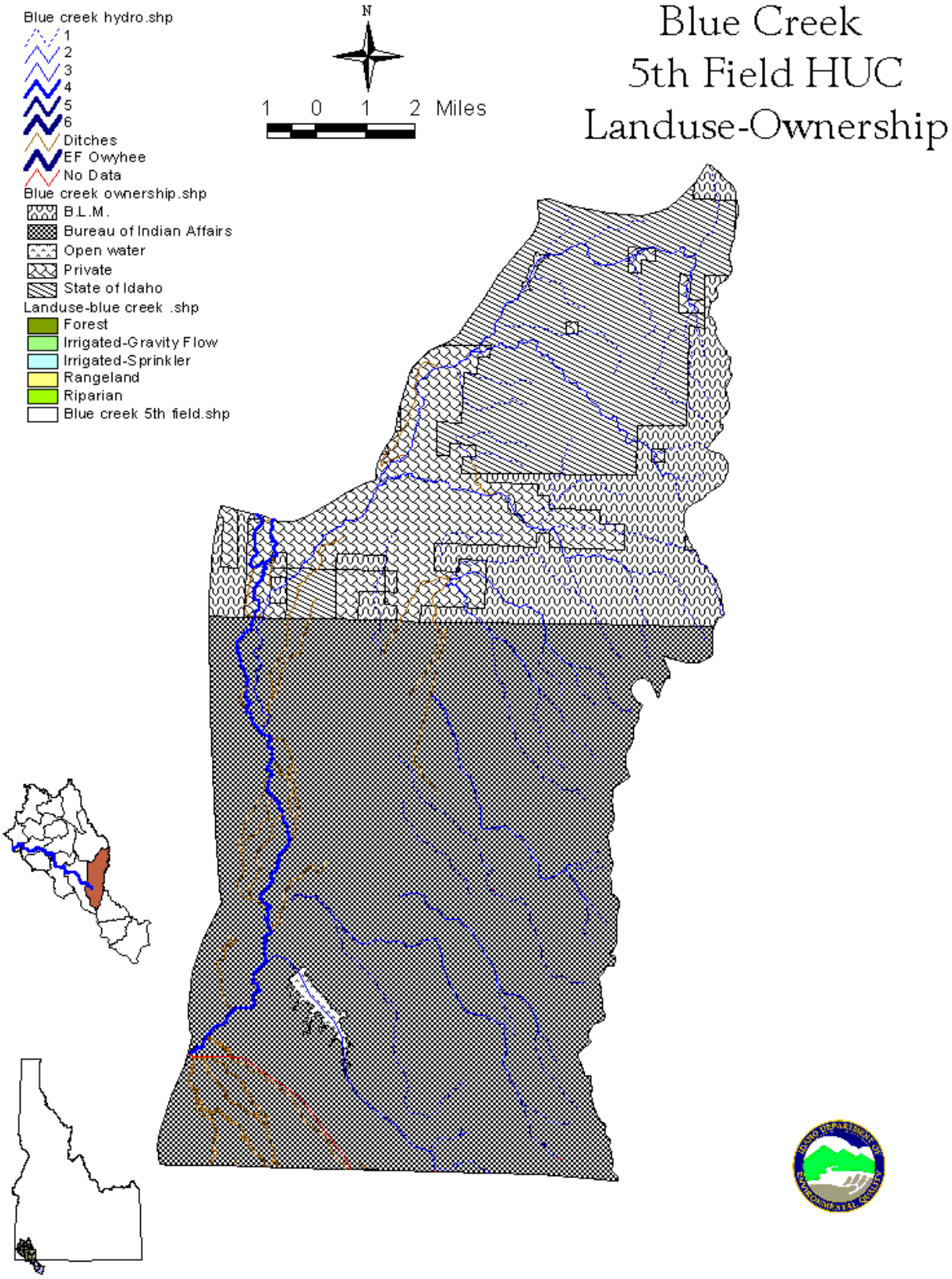
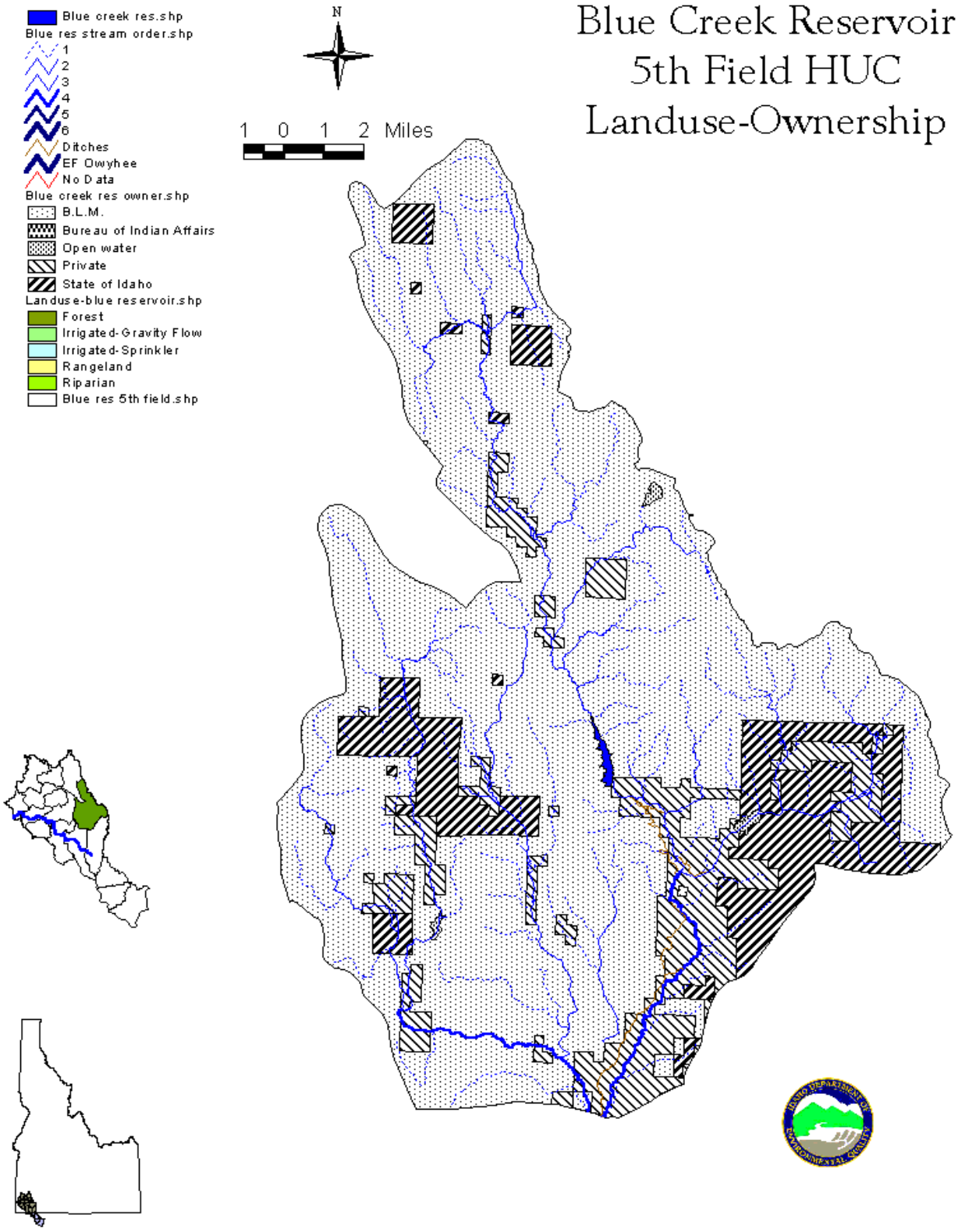
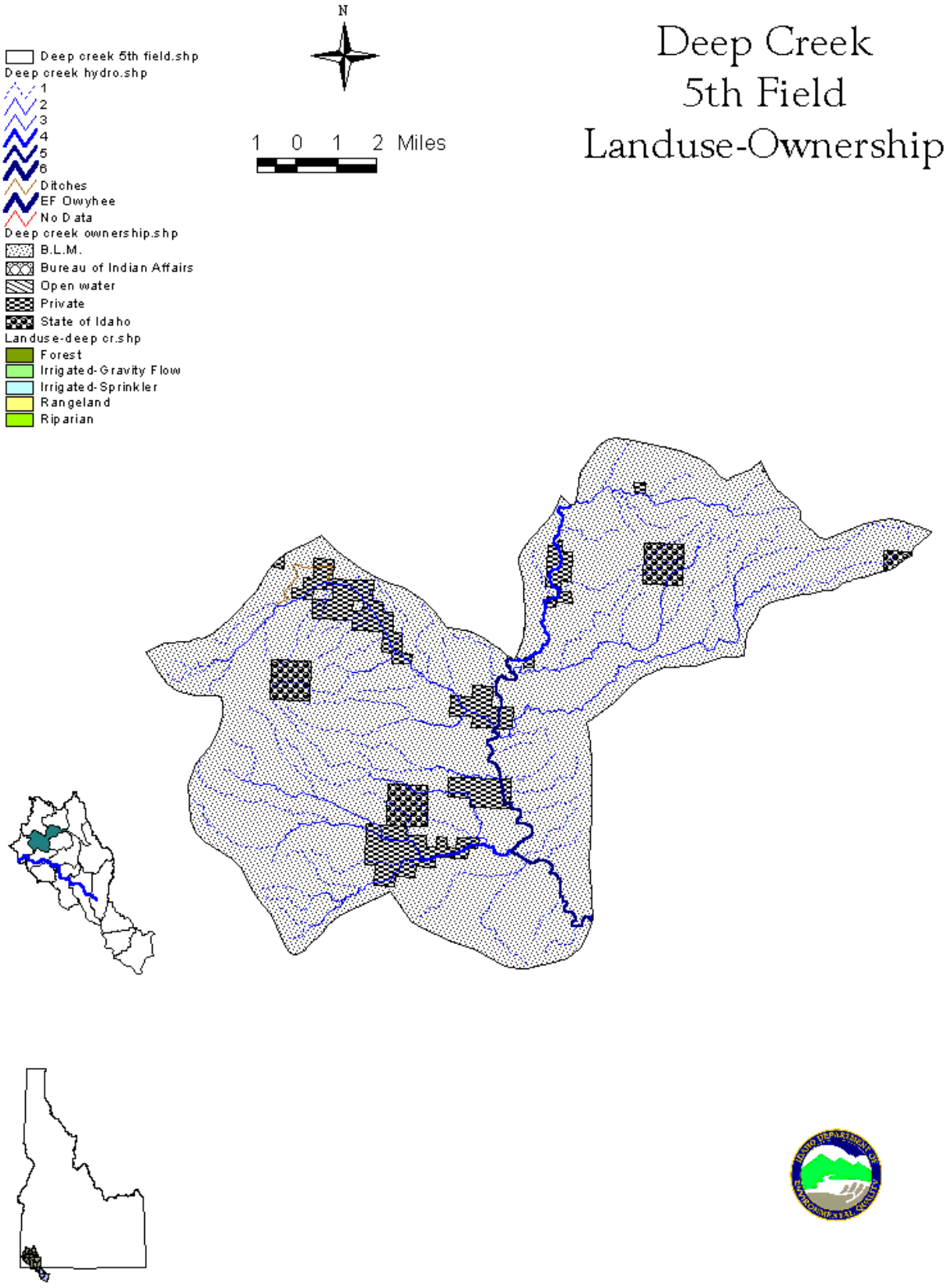

Blue Creek
5th Field HUC
Landuse-Ownership
N
1 0 1 2 Miles
Blue creek hydro.shp
1
2
3
4
5
6
Ditches
EF Owyhee
No Data
Blue creek ownership.shp
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
Landuse-blue creek .shp
Forest
Irrigated-Gravity Flow
Irrigated-Sprinkler
Rangeland
Riparian
Blue creek 5th field.shp

Table B3. Blue Creek Reservoir 5th Field HUC Statistics.

Blue Creek Reservoir	Statistics
5th Field HUC	
Total Area	136,477 acres
0-1st Order Streams	207.9 miles
2nd Order Streams	51.8 miles
3rd Order Streams	49.2 miles
4th Order Streams	16.5 miles
Canals/Ditches	13.4 miles
§303(d) Listed Segments	
Shoofly Creek	21.4 miles
Listed Pollutant	Bacteria
Blue Creek Reservoir	185 acres
Listed Pollutant	Sediment
Land Use	
Rangeland	136,062 acres (99%)
Irrigated	418 acres (<1%)
Land Ownership/Management	
Private	17,182 acres (12.7%)
State of Idaho	17,462 acres (12.8%)
Federal (BLM)	101,182 acres (74.1%)
Open Water	494 acres (<.1%)
Other Water Bodies	
Blue Creek	33.3 miles
Little Blue Creek	10.1 miles
Harris Creek	11.3 miles
Bybee Reservoir	
Little Blue Creek Reservoir	


Blue creek res.shp
Blue res stream order.shp
1
2
3
4
5
6
Ditches
EF Owyhee
No Data
Blue creek res owner.shp
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
Landuse-blue reservoir.shp
Forest
Irrigated-Gravity Flow
Irrigated-Sprinkler
Rangeland
Riparian
Blue res 5th field.shp
N
1 0 1 2 Miles
Blue Creek Reservoir
5th Field HUC
Landuse-Ownership

Deep Creek 5th Field HUC	Statistics
Total Area	71,598 acres
0-1st Order Streams	138.0 miles
2nd Order Streams	41 miles
3rd Order Streams	15.7 miles
4th Order Streams	10.7 miles
5th Order	11.8 miles
Canals/Ditches	2.8 miles
§303(d) Listed Segments	
Deep Creek	11.8 miles
Listed Pollutants(s)	Temperature/Sediment
Castle Creek	11.3 miles
Listed Pollutant	Temperature/Sediment
Pole Creek	5.6 miles
Listed Pollutants(s)	Temperature/Sediment
Land Use	
Rangeland	60,102.2 acres
Irrigated	
Forest	9,945.6 acres
Riparian	1,550.4 acres
Land Ownership/Management	
Private	4976 acres
State of Idaho	2066 acres
Federal (BLM)	64,556 acres
Other Water Bodies	
Beaver Creek	9.0 miles
Bull Gulch	0.4 miles
Carter Creek	3.7 miles
Cowboy Creek	6.3 miles
Dickshooter Creek	2.5 miles
Jobe Creek	1.5 miles
Lightening Creek	4.4 miles
Long Meadow Creek	5.4 miles
Moonshine Creek	2.4 miles
Skunk Creek	2.4 miles
Swisher Creek	2.1 miles
Brace Reservoir	


Deep creek 5th field.shp
Deep creek hydro.shp
1
2
3
4
5
6
Ditches
EF Owyhee
No Data
Deep creek ownership.shp
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
Landuse-deep cr.shp
Forest
Irrigated-Gravity Flow
Irrigated-Sprinkler
Rangeland
Riparian
N
1 0 1 2 Miles
Deep Creek
5th Field
Landuse-Ownership

Lower Battle Creek 5th Field HUC	Statistics
Total Area	82,523 acres
0-1st Order Streams	112.1 miles
2nd Order Streams	24.1 miles
3rd Order Streams	4.6 miles
4th Order Streams	29.1 miles
§303(d) Listed Segments	
Battle Creek	29.0 miles
Listed Pollutants(s)	Bacteria
Land Use	
Rangeland	70,995 acres
Riparian	11,530 acres
Land Ownership/Management	
Private	539 acres
State of Idaho	2,886 acres
Federal (BLM)	79,098 acres
Other Water Bodies	
Cottonwood Draw	3.7 miles
Freshwater Draw	6.6 miles
Kelly Park	7.4 miles
Owyhee River	15.7 miles
Yatahoney Creek	3.8 miles
Unnamed	123.5 miles

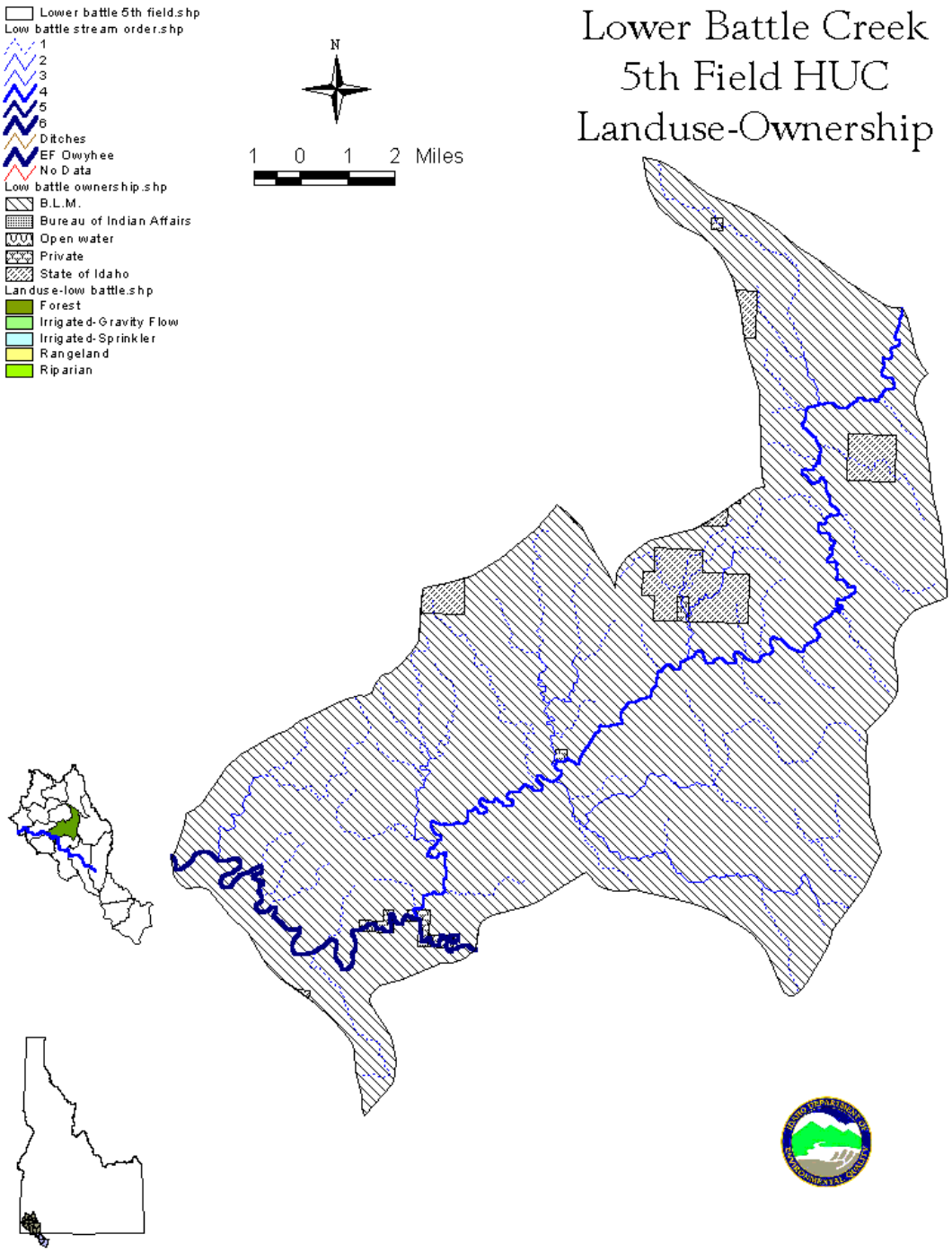

Lower battle 5th field.shp
Low battle stream order.shp
1
2
3
4
5
6
Ditches
EF Owyhee
No Data
Low battle ownership.shp
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
Landuse-low battle.shp
Forest
Irrigated-Gravity Flow
Irrigated-Sprinkler
Rangeland
Riparian
N
1 0 1 2 Miles
Lower Battle Creek
5th Field HUC
Landuse-Ownership

Table B4. Hurry Back Field HUC Statistics.

Hurry Back 5th Field HUC	Statistics
Total Area	98,406 acres
0-1st Order Streams	179.2 miles
2nd Order Streams	57.4 miles
3rd Order Streams	15.8 miles
4th Order Streams	23.4 miles
5th Order Streams	4.8 miles
Canals/Ditches	6.4 miles
§303(d) Listed Segments	
Deep Creek	13.0 miles
Listed Pollutant	Temperature/Sediment
Pole Creek	2.5 miles
Listed Pollutant	Temperature/Sediment
Nickel Creek	2.8 miles
Listed Pollutant	Sediment
Other Water Bodies	
Anne Valley Creek	9.3 miles
Corral Creek	5.4 miles
Cow Valley Canyon	2.5 miles
Crooked Creek	3.0 miles
Current Creek	13.6 miles
Deep Creek	13 miles
Hidden Valley Creek	2 miles
Hurry Back Creek	11.2 miles
Hurry Up Creek	4.8 miles
Jackass Creek	1.9 miles
Little Smith Creek	4.2 miles
Little Thomas Creek	6.2 miles
Nickel Creek	13.7 miles
Nip and Tuck Creek	9.1 miles
Pleasant Valley Creek	5.5 miles
Pole Creek	2.5 miles
Slack Creek	3.7 miles
Smith Creek	7.1 miles
Stoneman Creek	3.9 miles
Thomas Creek	4.7 miles

Unnamed	158 miles
Land Use	
Rangeland	49,694.4 acres
Forest	45,816.7 acres
Riparian	2891.3 acres
Land Ownership/Management	
Private	12,453 acres
State of Idaho	17,143 acres
Federal (BLM)	68,795 acres
Open Water	15 acres

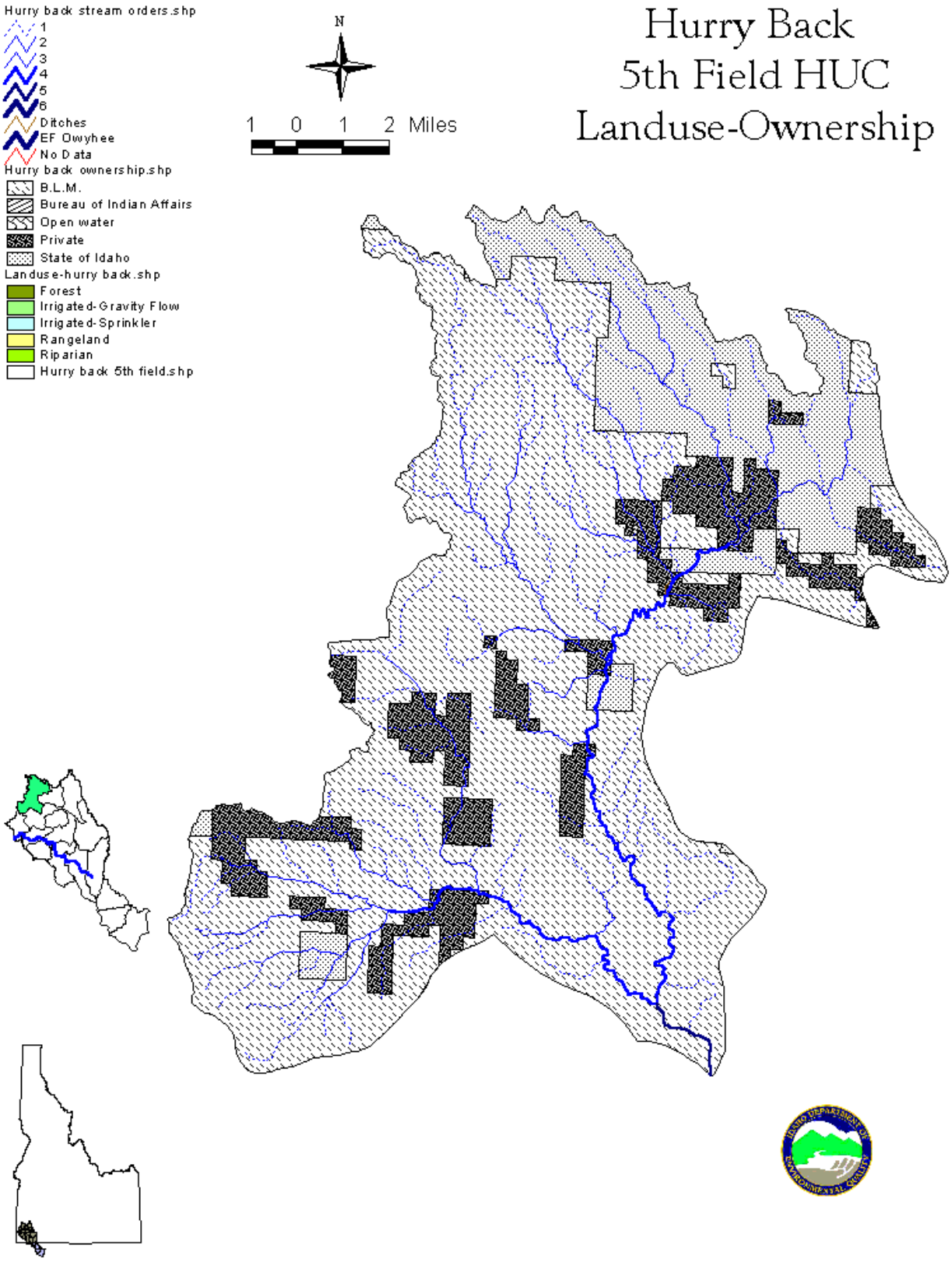

Hurry back stream orders.shp
1
2
3
4
5
6
Ditches
EF Owyhee
No Data
Hurry back ownership.shp
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
Landuse-hurry back.shp
Forest
Irrigated-Gravity Flow
Irrigated-Sprinkler
Rangeland
Riparian
Hurry back 5th field.shp
N
1 0 1 2 Miles
Hurry Back
5th Field HUC
Landuse-Ownership

Table B5. Lower Owyhee 5th Field HUC Statistics.

Lower Owyhee 5th Field HUC	Statistics
Total Area	
0-1st Order Streams	62.7 miles
2nd Order Streams	0.3 miles
3rd Order Streams	14.8 miles
5th Order Streams	11.6 miles
EF Owyhee River	20.3 miles
§303(d) Listed Segments	
Deep Creek	
Listed Pollutant	Temperature Sediment
Other Water Bodies	
Cherry Gulch	3.1 miles
Paiute Creek	1.4 miles
Porcupine Creek	7.3 miles
Unnamed	67.5 miles
Land Use	
Rangeland	47,969 acres
Riparian	5,459 acres
Land Ownership/Management	
Private	168 acres
State of Idaho	595 acres
Federal (BLM)	52,664 acres

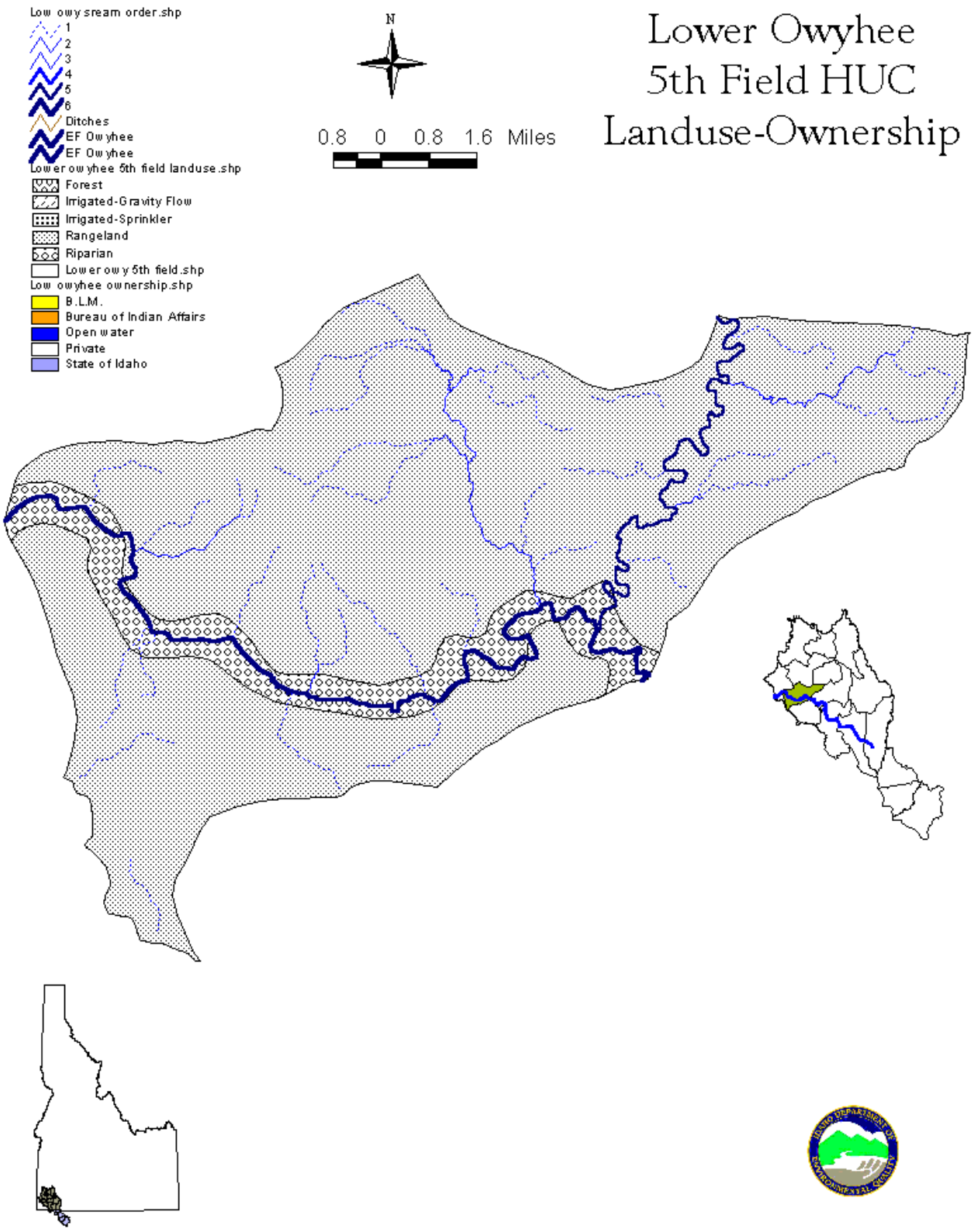

Low owy sream order.shp
1
2
3
4
5
6
Ditches
EF Owyhee
EF Owyhee
Lower owyhee 5th field landuse.shp
Forest
Irrigated-Gravity Flow
Irrigated-Sprinkler
Rangeland
Riparian
Lower owy 5th field.shp
Low owyhee ownership.shp
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
N
0.8 0 0.8 1.6 Miles
Lower Owyhee
5th Field HUC
Landuse-Ownership

Table B6. Paiute Creek 5th Field HUC Statistics.

Paiute Creek5th Field HUC	Statistics
Total Area	50,634 acres
0-1st Order Streams	91.0 miles
2nd Order Streams	20.2 miles
3rd Order Streams	8.7 miles
4th Order Streams	6.5 miles
5th Order Streams	
Canal/Ditches	0.1 miles
§303(d) Listed Segments	
none	
Other Water Bodies	
Paiute Creek	15.7 miles
Unnamed	110.8 miles
Land Use	
Rangeland	49,707 acres
Riparian	926.7 acres
Land Ownership/Management	
State of Idaho	2,696 acres
Federal (BLM)	47,938 acres

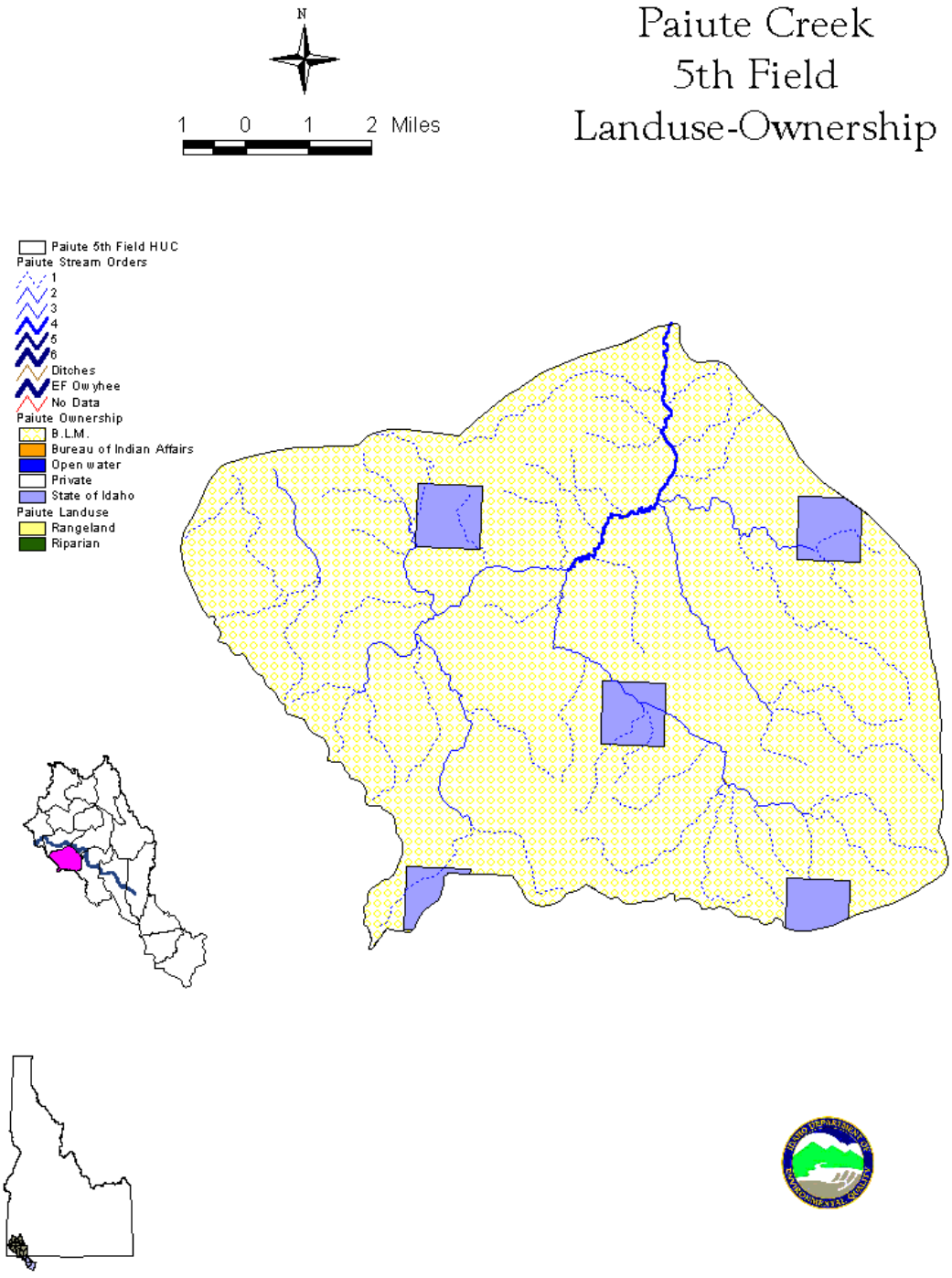

N
1 0 1 2 Miles
Paiute Creek
5th Field
Landuse-Ownership
Paiute 5th Field HUC
Paiute Stream Orders
1
2
3
4
5
6
Ditches
EF Owyhee
No Data
Paiute Ownership
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
Paiute Landuse
Rangeland
Riparian

Table B7. Pole Creek 5th Field HUC Statistics.

Pole Creek 5th Field HUC	Statistics
Total Area	54,551 acres
0-1st Order Streams	100.1 miles
2nd Order Streams	17.7 miles
3rd Order Streams	15.7 miles
4th Order Streams	8.3 miles
Canals/Ditches	4.8 miles
§303(d) Listed Segments	
Pole Creek	19.2 miles
Listed Pollutants(s)	Temperature/Sediment
Other Water Bodies	
Camas Creek	14.0 miles
Camel Creek	5.4 miles
Slack Creek	5.5 miles
Sunshine Valley Creek	2.7 miles
Unnamed	99.8 miles
Land Use	
Rangeland	54,551 acres
Land Ownership/Management	
Private	5,763
State of Idaho	3507
Federal (BLM)	45,281

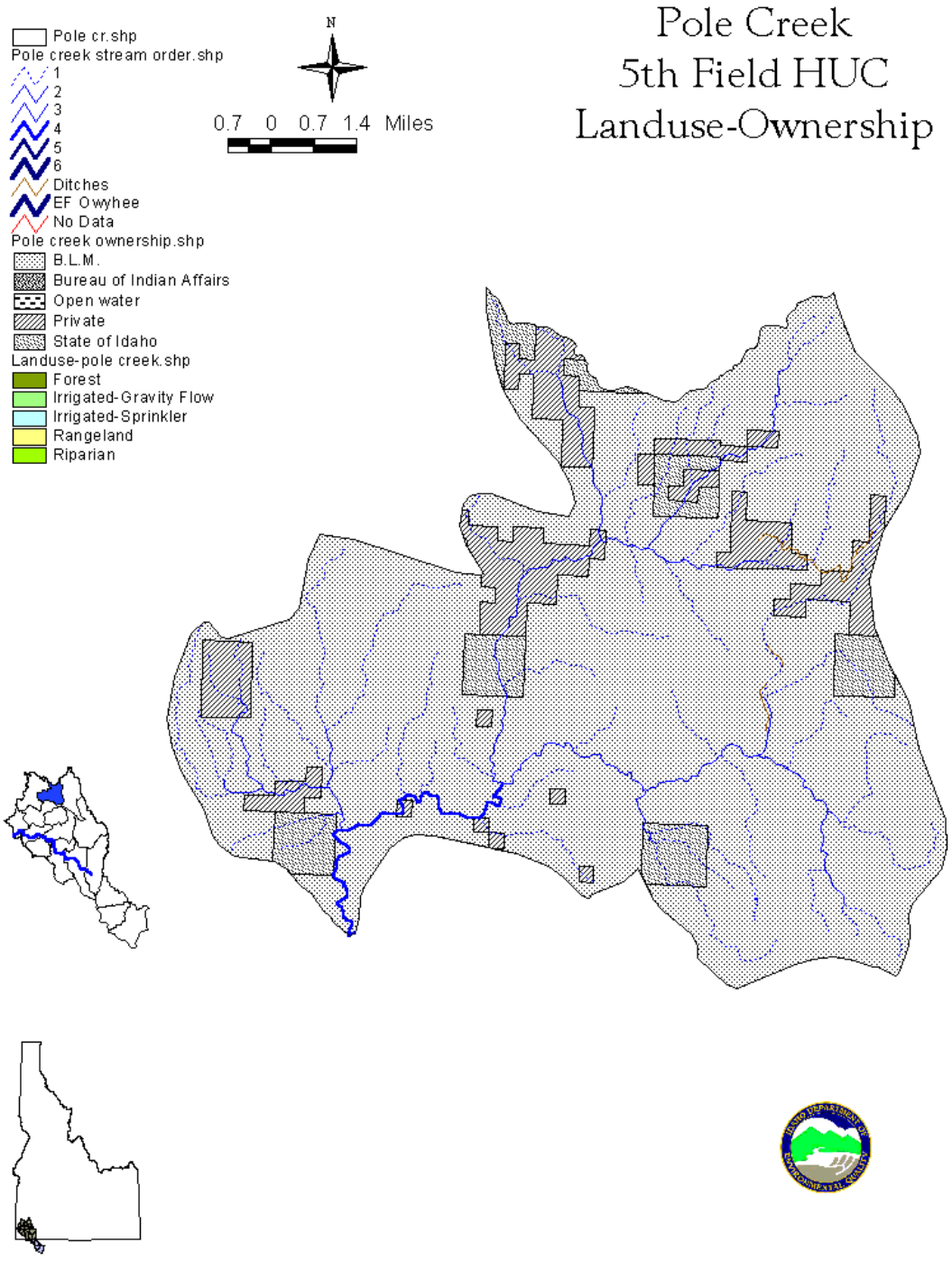

Pole cr.shp
Pole creek stream order.shp
1
2
3
4
5
6
Ditches
EF Owyhee
No Data
Pole creek ownership.shp
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
Landuse-pole creek.shp
Forest
Irrigated-Gravity Flow
Irrigated-Sprinkler
Rangeland
Riparian
N
0.7 0 0.7 1.4 Miles
Pole Creek
5th Field HUC
Landuse-Ownership

Table B8. Red Canyon 5th Field Statistics.

Red Canyon 5th Field HUC	Statistics
Total Area	49,897.4 acres
0-1st Order Streams	83.6 miles
2nd Order Streams	23.5 miles
3rd Order Streams	13.8 miles
4th Order Streams	3.0 miles
5th Order Streams	7.5 miles
§303(d) Listed Segment	
Red Canyon Creek	5.1 miles
Listed Pollutant	Temperature/Sediment
Other Water Bodies	
Petes Creek	7.9 miles
Bull Basin Creek	7.2 miles
Red Basin Creek	8.3 miles
East Fork Red Canyon Creek	6.0 miles
West Fork Red Canyon Creek	8.2 miles
East Fork Owyhee River	7.2 miles
Cow Creek	4.0 miles
Land Use	
Rangeland	26,250.6 acres
Forest	20,343.4 acres
Riparian	3,303.3 acres
Land Ownership/Management	
Private	453 acres
Federal (BLM)	49,445 acres

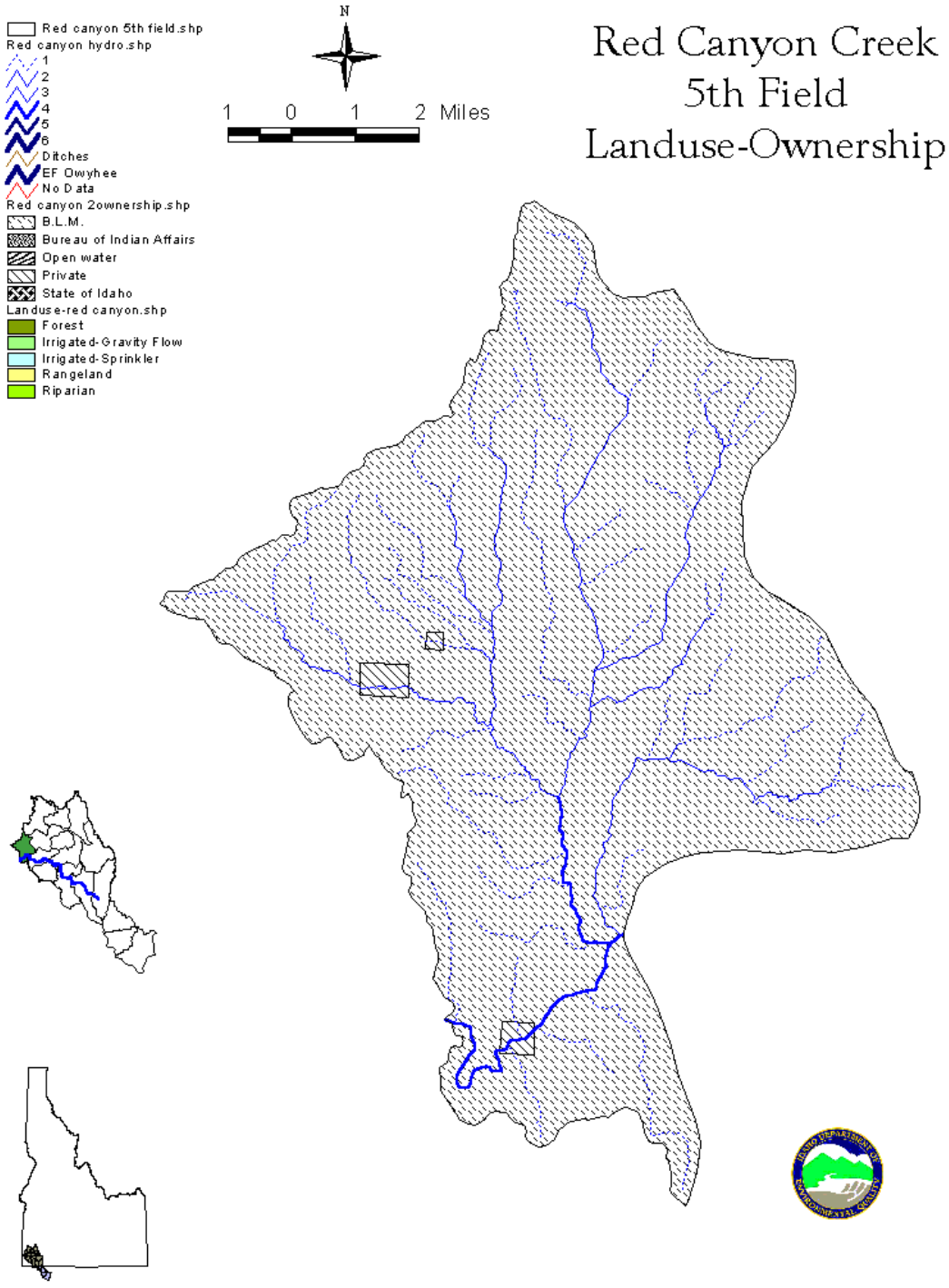

Red canyon 5th field.shp
Red canyon hydro.shp
1
2
3
4
5
6
Ditches
EF Owyhee
No Data
Red canyon 2ownership.shp
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
Landuse-red canyon.shp
Forest
Irrigated-Gravity Flow
Irrigated-Sprinkler
Rangeland
Riparian
N
1 0 1 2 Miles
Red Canyon Creek
5th Field
Landuse-Ownership

Table B9. Ross Lake 5th Field HUC Statistics.

Ross Lake 5th Field HUC	Statistics
Total Area	110,009
0-1st Order Streams	88.3 miles
2nd Order Streams	19.3 miles
3rd Order Streams	5.8 miles
Canal/Ditches	17.0 miles
East Fork Owyhee	24.1 miles
§303(d) Listed Segments	
None	
Other Water Bodies	
Billy Shaw Slough	2.5 miles
Ross Slough	10.3 miles
Unnamed	112.0 miles
Land Use	
Rangeland	77,274 acres
Forest	acres
Riparian	1,452 acres
Land Ownership/Management	
Private	299 acres
State of Idaho	84 acres
Federal (BLM)	16,208 acres
Open Water	2,297 Acres
Federal (Tribal)	59,839 acres

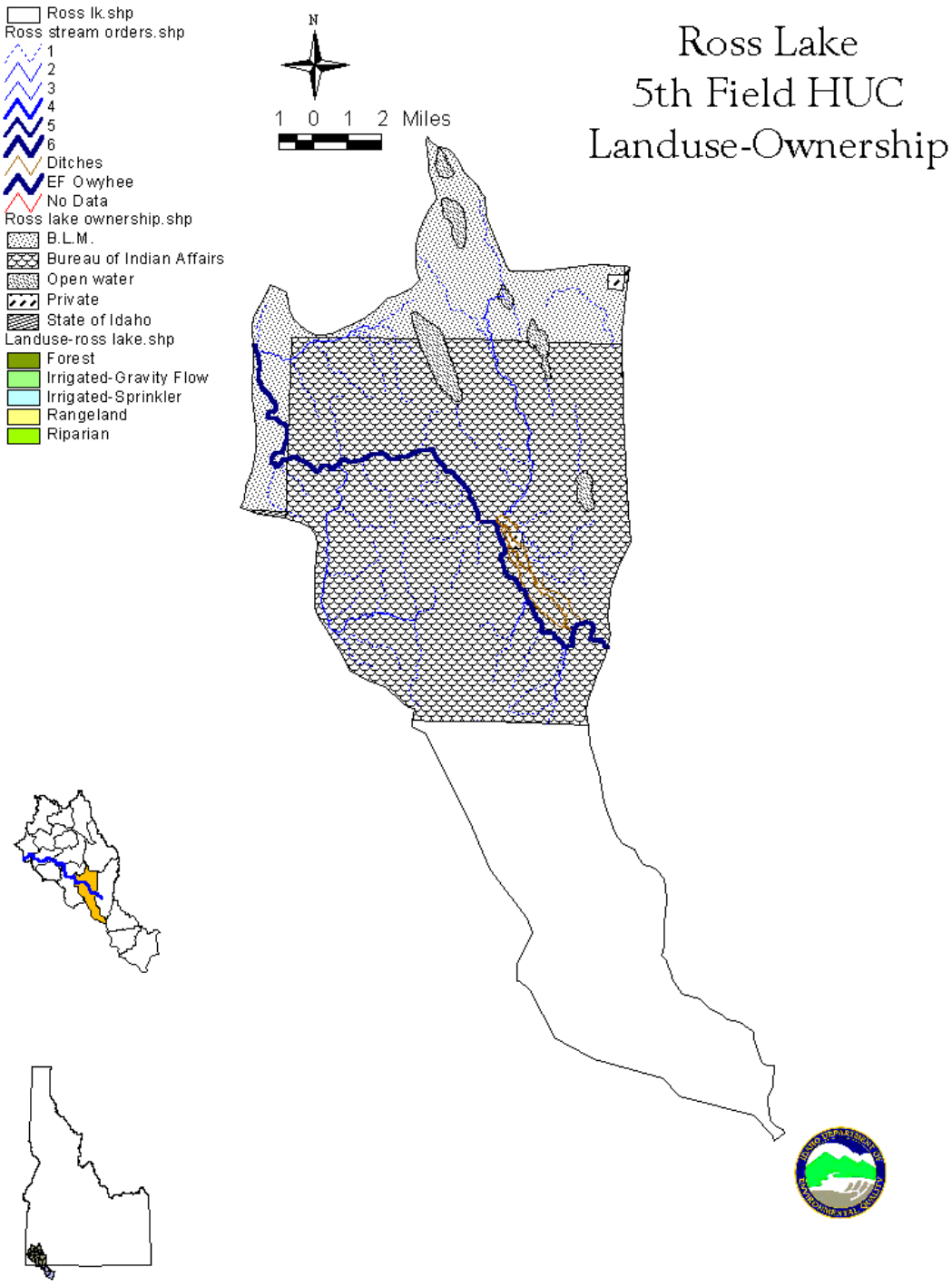

Ross lk.shp
Ross stream orders.shp
1
2
3
4
5
6
Ditches
EF Owyhee
No Data
Ross lake ownership.shp
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
Landuse-ross lake.shp
Forest
Irrigated-Gravity Flow
Irrigated-Sprinkler
Rangeland
Riparian
N
1 0 1 2 Miles
Ross Lake
5th Field HUC
Landuse-Ownership

Table B10. Dickshooter 5th Field HUC Stats.

Dickshooter 5th Field HUC	Statistics
Total Area	49,010 acres
0-1st Order Streams	88.4 miles
2nd Order Streams	20.6 miles
3rd Order Streams	6 miles
4th Order Streams	14 miles
§303(d) Listed Segments	
None	
Listed Pollutants(s)	
Other Water Bodies	
Dickshooter Creek	22.5 miles
Unnamed	106.9 miles
Land Use	
Rangeland	49,009 acres
Land Ownership/Management	
Private	427 acres
State of Idaho	2678 acres
Federal (BLM)	45,904 acres

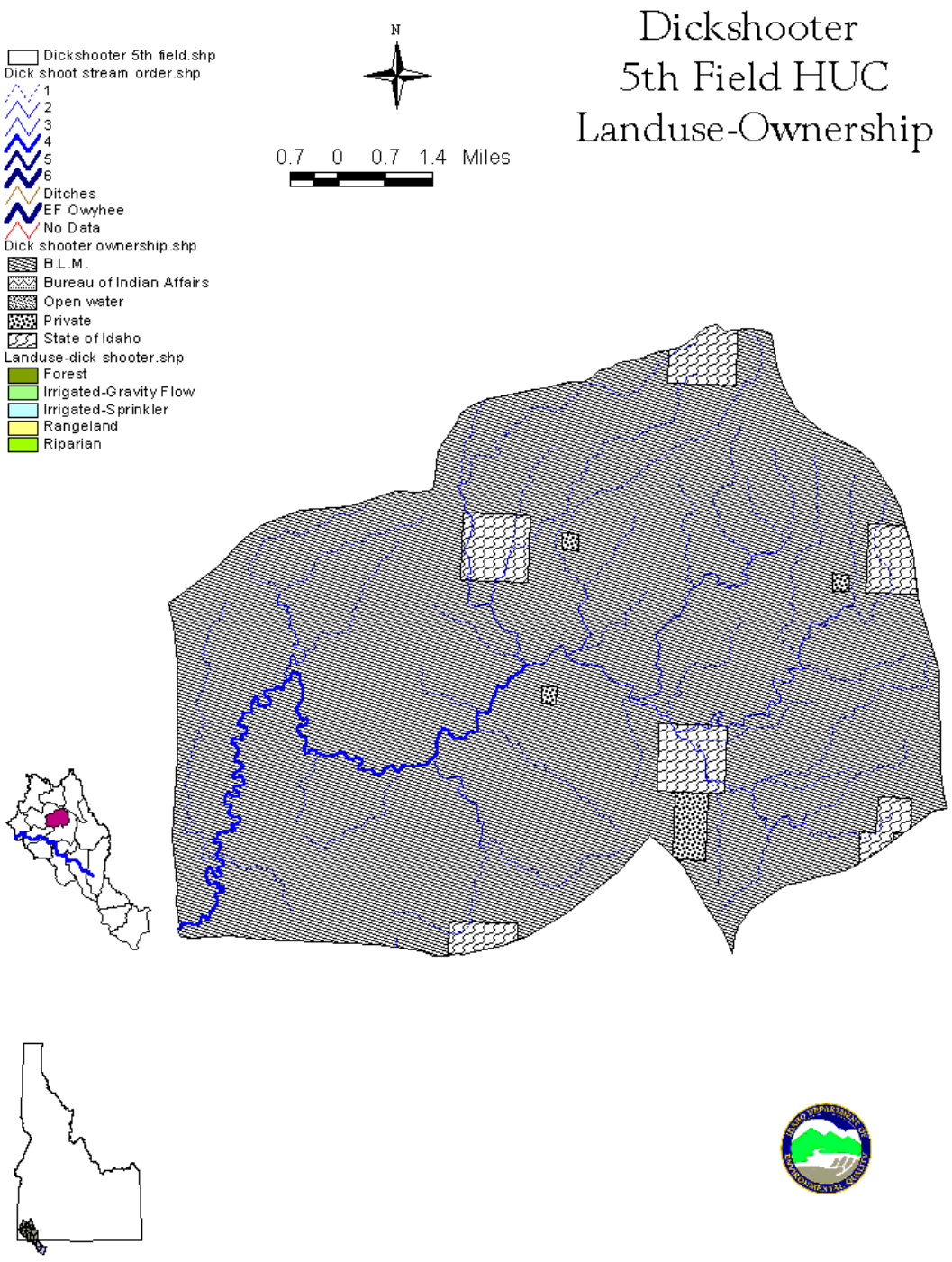

Dickshooter
5th Field HUC
Landuse-Ownership
N
0.7 0 0.7 1.4 Miles
Dickshooter 5th field.shp
Dick shoot stream order.shp
1
2
3
4
5
6
Ditches
EF Owyhee
No Data
Dick shooter ownership.shp
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
Landuse-dick shooter.shp
Forest
Irrigated-Gravity Flow
Irrigated-Sprinkler
Rangeland
Riparian

Table B11. Upper Battle Creek 5th Field HUC Statistics.

Upper Battle Creek 5th Field HUC	Statistics
Total Area	100,651 acres
0-1st Order Streams	140.5 miles
2nd Order Streams	50.9 miles
3rd Order Streams	28.4 miles
4th Order Streams	2.7 miles
Canal/Ditches	26.7 miles
§303(d) Listed Segments	
Battle Creek	35.5 miles
Listed Pollutants(s)	Bacteria
Other Water Bodies	
Big Springs Creek	15.8 miles
Dry Creek	15.0 miles
Rock Creek	4.8 miles
Unnamed	178.1 miles
Land Use	
Rangeland	88,979.8 acres
Irrigated	1,493.3 acres
Riparian	10,178.6 acres
Land Ownership/Management	
Private	12,169 acres
State of Idaho	6,500 acres
Federal (BLM)	81,911 acres
Open Water	71 acres

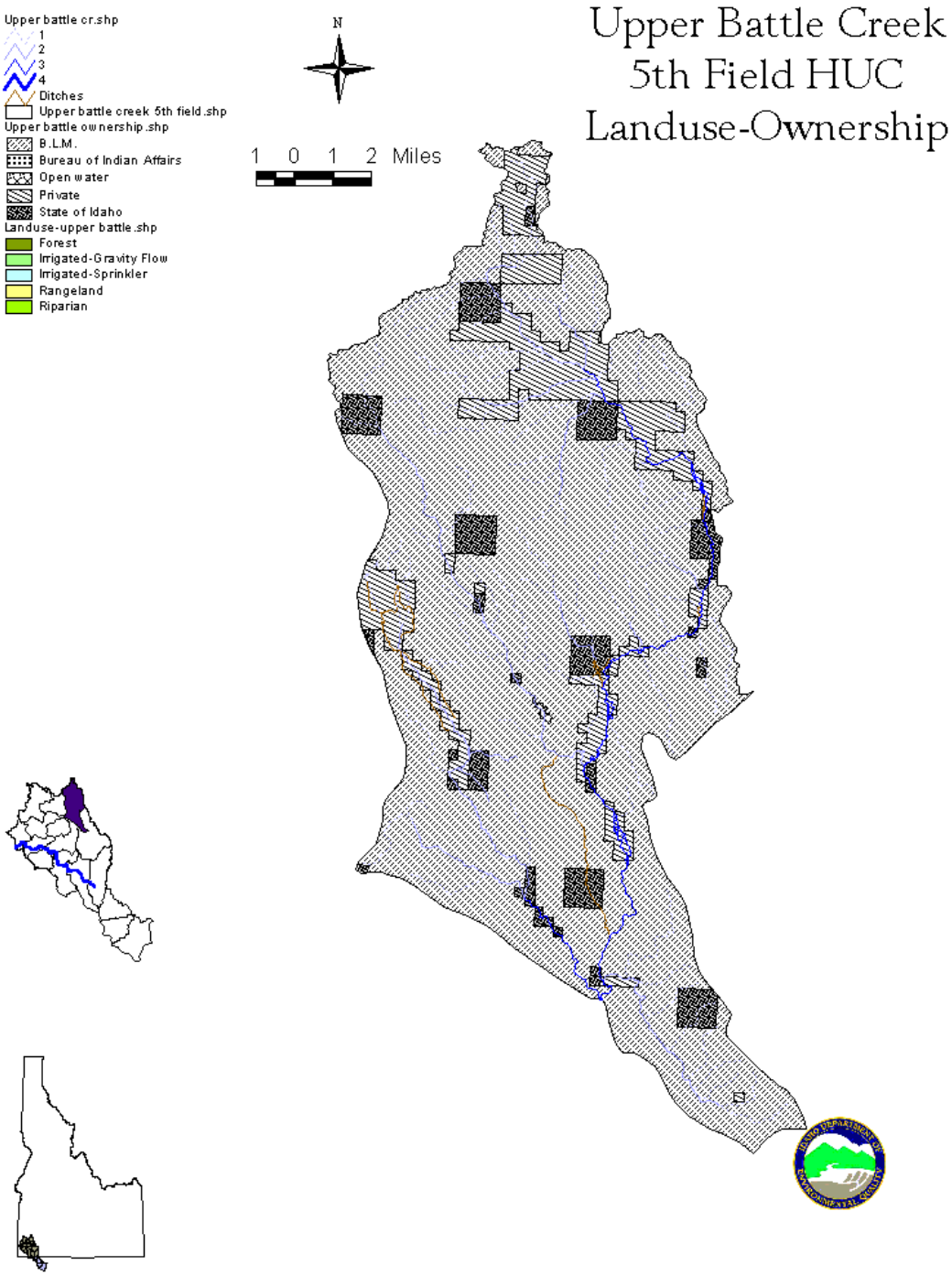
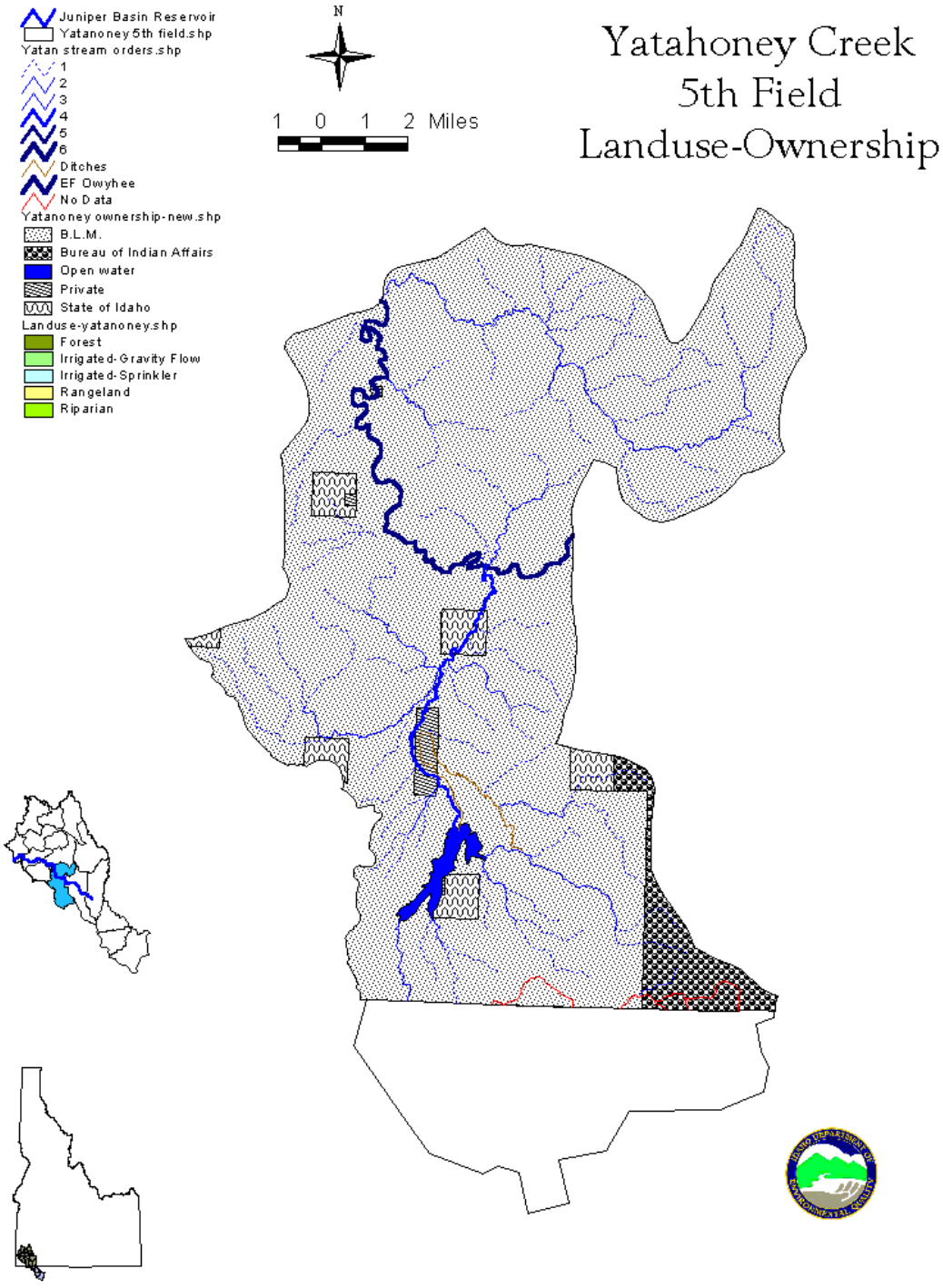

Upper Battle Creek
5th Field HUC
Landuse-Ownership
Upper battle cr.shp
1
2
3
4
Ditches
Upper battle creek 5th field.shp
Upper battle ownership.shp
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
Landuse-upper battle.shp
Forest
Irrigated-Gravity Flow
Irrigated-Sprinkler
Rangeland
Riparian
N
1 0 1 2 Miles

Table B12. Yatahoney 5th Field HUC Statistics.

Yatahoney Creek 5th Field HUC	Statistics
Total Area	90,528 acres
0-1st Order Streams	118 miles
2nd Order Streams	34.8 miles
3rd Order Streams	12.9 miles
4th Order Streams	9.7 miles
6th Order	16.6 miles
Canals/Ditches	7.4 miles
§303(d) Listed Segments	
Juniper Basin Reservoir	749 acres
Listed Pollutant	Sediment
Other Water Bodies	
Juniper Creek	13.1 miles
Owyhee River	16.6 miles
Yatahoney Creek	19.9 miles
Unnamed	155.2 miles
Land Use	
Rangeland	84,920 acres
Riparian	5,563.3 acres
Land Ownership/Management	
Private	749 acres
State of Idaho	2,856 acres
Federal (BLM)	82,750 acres
Open Water	749 acres


Juniper Basin Reservoir
Yatanoney 5th field.shp
Yatan stream orders.shp
1
2
3
4
5
6
Ditches
EF Owyhee
No Data
Yatanoney ownership-new.shp
B.L.M.
Bureau of Indian Affairs
Open water
Private
State of Idaho
Landuse-yatanoney.shp
Forest
Irrigated-Gravity Flow
Irrigated-Sprinkler
Rangeland
Riparian
N
1 0 1 2 Miles
Yatahoney Creek
5th Field
Landuse-Ownership